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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,653

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Shuichi Ichikawa

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OLIFF & BERRIDGE, PLC

P.O. BOX 320850

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EXAMINER

GUGLIOTTA, NICOLE T

ART UNIT

PAPER NUMBER

1794

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,653	<b>Applicant(s)</b> ICHIKAWA ET AL.	
	<b>Examiner</b> NICOLE T. GUGLIOTTA	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 6 - 10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6 - 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Examiner's Note*

1. Examiner acknowledges the cancellation of claims 1 – 5 and the amendments made to claims 6 - 10. Examiner also acknowledges no new matter has been added.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6 - 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita et al. (US 2003/0021949 A1), in view of Farrauto et al. (WO 93/10886, provided by applicant), and further in view of Dawes (U.S. Patent No. 5,998,328).

4. In regard to claims 6 and 9, Tomita et al. disclose a process for producing silicon carbide-based porous body, molding the mixture to a predetermined shape, calcinating the molded material in an oxygen-containing atmosphere to remove the organic binder in the molded material, and firing the calcinated material to obtain a silicon-carbide based porous body wherein an oxygen-containing phase is formed at the surfaces of the silicon carbide particles and/or the metallic silicon or in the vicinity of the surfaces

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thereof (Section [0018]). Tomita et al. are silent in regard to a catalyst composition containing alumina and ceria.

5. Farrauto et al. disclose the present invention teaches that a ceria-alumina catalytic material comprising essentially only ceria and alumina of sufficiently high surface area, dispersed on a suitable carrier, provides a durable and effective diesel oxidation catalyst (Page 10, Lines 29 – 34).

6. It would have been obvious to one skilled in the art at the time the invention was made to add a ceria-alumina coating to the honeycomb body disclosed by Tomita et al., in that ceria-alumina has been shown to be an efficient catalytic material which provides durability and an effective diesel oxidation catalyst, as disclosed by Farrauto et al.

7. In regard to claim 6, Tomita et al. disclose the presence of oxygen. However, Tomita et al. and Farrauto et al. are silent in regard to creating an oxidizing atmosphere using steam.

8. Dawes et al. disclose activating a honeycomb structure, made of silicon carbide (Col. 4, Lines 3 - 12), which is done by known methods such as exposing the structure to an oxidizing agent such as steam at high temperatures. Activation creates a high surface area and in turn imparts high adsorptive capability to the structure (Col. 7, Lines 12 - 20).

9. Takashi et al. and Tomita et al. above both disclose an oxygen containing atmosphere for oxidizing the surface of the honeycomb body. Dawes et al. disclose using steam as an oxidizing agent for the surface of a silicon carbide honeycomb body.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to oxidize the surface of the honeycomb with steam.

10. In regard to claim 7, applicant claims heat treatment is conducted by burner combustion and heating using natural gas fuel.

11. Dawes et al. disclose the placement of structure into an oven to evaporate the solvent (Col. 8, Lines 60 – 62).

12. Natural gas is a common and conventional fuel. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use burner combustion (natural gas) to heat the silicon carbide-based honeycomb structure.

13. In regard to claims 8 and 10, Tomita et al. disclose the heat treatment is carried out preferably in a temperature range of 500 to 1,400°C (Section [0020]).

### ***Response to Arguments***

14. **In regard to claims 5 and 8 – 10**, Applicants' argue "By this Amendment, claim 6 is recast in independent form and claim 8 is amended to depend from non-rejected claim 6. Additionally, by this Amendment, claim 9 is amended to recite 'wherein the heat treatment is conducted in an atmosphere containing oxygen and steam.' Page 5 of the Office Action acknowledges that Tomita and Farrauto are silent in regard to creating an oxidizing atmosphere using steam."

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15. Applicant's arguments with respect to claims 5, (6) and 8 - 10 have been considered but are moot in view of the new ground(s) of rejection. Examiner has reformed the rejection as a result of amendments made by applicant. While Tomita and Farrauto are silent in regard to creating an oxidizing atmosphere using steam, the use of steam is supported by Dawes (see rejection above).

16. **In regard to claims 6 and 7**, Applicants' argue "Dawes relates to an activated carbon catalyst that is coated onto a support. Dawes uses steam to activate the carbon, which supposedly enhances the volume and diameter of the micropores formed during carbonization. There is no indication in Dawes that the presence of steam will promote oxide film formation according to the methods of claims 6 and 9, without carbon present."

17. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "steam promoting oxide film formation") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

18. First, Examiner notes "oxygen film formation" is not a limitation in applicants' claims, much less how such a film is formed.

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19. Second, the use of the phrase "characterized by" in Applicants' claims 6 and 9 do not limit the possibility of other steps, such as the presence of activated carbon, as taught by Dawes. MPEP 2111.03 [R-3] states

The transitional term "comprising", which is synonymous with "including," "containing," or **"characterized by,"** is inclusive or open-ended and **does not exclude additional, unrecited elements or method steps.** See, e.g. *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004) ("like the term comprising,' the terms containing' and mixture' are open-ended."); *Invitrogen Corp. v. Biocrest Mfg., L.P.* 327 F.3d 1364, 1368 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("**the transition comprising' in a method claim indicated that the claim is open-ended and allows for additional steps.**"); *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.* 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F. 2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts").

20. Therefore, Examiner takes the position Applicants' claim language is not limited only to those ingredients and steps set forth in their claim.

21. Applicants argue "as none of the applied references discuss specific material behaving the same in the presence of steam without having a continuous coating of carbon present, and the Office Action has provided no factual support for its allegations, the rejections are improper because the Office Action fails to provide a clear articulation of the rejection" (Remarks, Pages 5 - 6).

22. Applicants' arguments have been fully considered but they are not persuasive.

Dawes teaches the presence of steam for a silicon carbide honeycomb structure.

Whether activated carbon is necessary or not (or behaves the same) is a moot point

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due to applicant's open-ended claim language, as discussed above. Examiner hopes this explanation has clearly articulated the rejection to applicants' satisfaction.

23. Applicants argue "it appears the Office Action may be taking Official Notice that these materials will behave identically, or basing the rejection on alleged inherent properties. However, the application of Official Notice or inherency is not established and, thus, is improper in this case."

24. Applicants' arguments have been fully considered but they are not persuasive. Tomita et al. and Farrauto et al. both disclose oxidizing atmospheres when heat-treating their honeycomb structures. Dawes et al. teach the use of steam to create an oxidizing atmosphere. Steam inherently contains oxygen and therefore creates an oxidizing atmosphere. Examiner maintains the rejection as proper.

### ***Conclusion***

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the



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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE T. GUGLIOTTA whose telephone number is (571)270-1552. The examiner can normally be reached on M - Th 8:30 - 6 p.m., & every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NICOLE T. GUGLIOTTA  
Examiner  
Art Unit 1794

/Jennifer McNeil/  
Supervisory Patent Examiner, Art Unit 1794